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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/771,263

02/04/2004

Takayuki Shimada

829-620

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EXAMINER

NELMS, DAVID C

ART UNIT

PAPER NUMBER

2871

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/06/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/771,263

Applicant(s)

SHIMADA ET AL.

Examiner

Tarifur R. Chowdhury

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 and 34-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24,34-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 08/695,632.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>06/14/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 34-51 are rejected under 35 U.S.C. 102(e) as being anticipated by den Boer et al., (Boer), USPAT 6,372,534.**

3. As to claims 34 and 43, Boer discloses and shows in Figs. 1 and 4, a liquid crystal display device, comprising:

- A substrate (19);
- An array of transistors (9) on said substrate;
- A plurality of gate (7) and data (5) lines connected to said transistors;
- An array of pixel electrodes (3) on said substrate; a plurality of pixel electrodes overlapping at least one of the gate and data lines; and
- A photosensitive resin (33) on said substrate between said gate and data lines and said pixel electrodes at least in the areas of overlap and areas adjacent source electrodes of the transistors, wherein said photosensitive resin has a dielectric constant of less than about 5.0 (col. 6, lines 35-36) and a first group of contact vias (35) defined by photo-imaging,

Art Unit: 2871

- Wherein said pixel electrodes are in electrical communication with corresponding transistor source electrodes (31) through corresponding contact vias of said first group that are defined in said photosensitive resin.

As to claims 35 and 44, Boer also discloses (col. 7, lines 10-14) that the photosensitive resin is planarized adjacent pixel electrode.

As to claims 36 and 45, Boer discloses (col. 7, lines 25-26) that a pixel aperture ratio is at least about 65%-80%.

As to claims 37 and 46, Boer discloses (col. 7, lines 30-42) that the pixel electrode overlaps one of the drain and gate lines by about 0-2 micro-meters.

As to claims 38, 39, 47 and 48, Boer discloses and shows in Fig. 4 that the liquid crystal display device further comprising a semiconductor layer (23) including intrinsic a-Si (col. 8, line 45) on top of the gate insulating layer (21).

As to claims 40, 41, 49 and 50, Boer discloses (col. 6, lines 11-12) and shows in Fig. 4 that an ohmic contact layer (25) that includes amorphous silicon is formed over the semiconductor layer (23).

As to claims 42 and 51, Boer discloses (col. 10, lines 14-16) that the thickness of the pixel electrode is preferably 1400 angstroms.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**6. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer.**

7. As for claims 1-5, 14-16 and 21, Boer discloses and shows in Figs. 1 and 4, a transmission type liquid crystal display device comprising: gate lines (7); source lines (5); and switching elements (9) each arranged near a crossing of a gate line and a source line, a gate electrode (17) of a switching element being connected to the gate line (7), a source electrode (13) (applicant's drain electrode since interchanging source and drain electrode would not change the function of the display device) connected to the source line (5) and a drain electrode (15) of the switching element connected to a pixel electrode (3) for applying voltage to a liquid crystal layer, wherein a photosensitive organic transparent interlayer insulating film (33), formed from a cured organic polymer (col. 6, lines 23-27, 46-50) and having a thickness determined by a light transmittance and a dielectric constant of the film is provided above the switching element, the gate line, and the source line, said thickness of the transparent interlayer organic insulating

film provides a reduced capacitance between the pixel electrode and said gate line or source line (col. 5, lines 15-29; col. 6, lines 40-45; col. 7, lines 15-18), and

Said pixel electrode (3) is a transparent conductive film on the interlayer insulating film (33) (col. 6, lines 58-59),

Wherein the thickness of the interlayer insulating film is 1 to 2.5 micro-meters (col. 7, lines 4-5). Further, it is known in the art that when the thickness of the insulating layer increases transmittance lowers and since, among the three primary colors blue has the lowest transmittance and then the green and then the red the limitation of, "wherein a spectral transmittance of the transparent interlayer organic insulating film has a lower transmittance for blue light than that for green and red light." is met.

Still lacking the limitation such as the insulating layer being colorless. However, it is also known in the art that using a colorless (decolored) insulating layer increases the transmission of the display device and thus would have been obvious to one of ordinary skill in the art to use colorless interlayer organic insulating film for advantages such as increased brightness, lower amount of light from backlight and thus reduced power consumption.

Accordingly, claims 1-5, 14-16 and 21 would have been obvious.

As to claims 6 and 17, Boer also discloses that the photosensitive resin can be a positive type (col. 9, lines 61-63) .

As to claims 7, 8, 18 and 19, Boer discloses (col. 9, lines 45) that the photosensitive resin has a reactive peak at a wavelength of 365 nm.

As to claims 9, 11, 20 and 22, Boer discloses (col. 6, lines 46-50) that the insulating film includes photosensitive acrylic resin including a copolymer having methacrylic acid.

As to claim 10, Boer shows in Fig. 4 that the transparent interlayer organic insulating film (33) is curved.

As to claims 12 and 23, the limitation such as, "insulating film suppresses degradation by resist removing solution used to form the pixel electrode" is considered as product-by-process claim. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985); see also MPEP 2113).

As to claims 13 and 24, since the transparent insulating layer disclosed by Boer is made of a same material and having the similar dielectric constant as the claimed transparent insulating layer, it would have at least been obvious to one of ordinary skill in the art at the time of the invention was made that the transparent insulating layer of Boer has a light transmittance of 90% or more for light within an entire wavelength range of about 400 nm to about 800 nm.

***Amendment to the Claims***

8. Applicant's amendment filed on June 28, 2004 is not proper since all subject matter added to the original patent text by reissue must be underlined. 37 CFR 1.175(d) and (g). As such, claims 34-51 must be entirely underlined.

***Amendment to the specification***

9. This application is a first of two reissues of USPAT 6,433,851. The second reissue 10/915,717 is under final rejection. 37 CFR 1.177(a) requires that there specification be amended to include a passage indicating that there are more than one reissue applications filed.

***Interference***

10. Applicant has copied claims from USPAT 6,515,300 on filing. However, applicant failed to clearly notify the office of the copying. Note that applicant inserted the notification only in the Transmittal Letter (TRREISS (02/04/04). Interference may not be set up at this time since applicant did not meet the requirements of 37 CFR 41.202 (a)(1) through (a)(6) when copied claims of a patent. Note that the new rule replaced the old rule 37 CFR 1.607. A reply to this office action must include information required under 37 CFR ***§41.202***.

***Response to Amendment***

11. It is acknowledged and appreciated that applicant has filed an executed substitute reissue declaration on June 14, 2005.

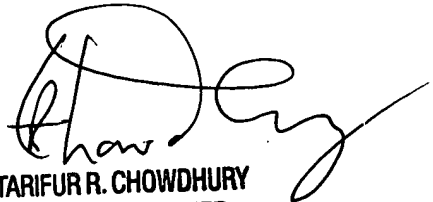
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R. Chowdhury whose telephone number is (571) 272-2287. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nelms C. David can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TRC  
January 16, 2007

  
TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER